

## REMARKS

Claims 1, 2, 4 – 7, 10, 11, 13 – 21, 23 – 28 and 30 remain in the present application.

### Objections

Claim 11 is objected to as being a preamble without a claim body reciting a structure relating to the filter. Applicant has amended Claim 11 to add a Claim body.

Claims 13 – 19 are objected to for failing to compensate for the deficiencies in Claim 11. Applicant has amended Claim 11 to add a Claim body.

Claims 7 is objected to for an informality. The present Office Action alleges “input” should be “inputted”. Applicant has amended Claim 7 to read “inputted”

Claims 27 is objected to for an informality. The present Office Action alleges “input” should be “inputted”. Applicant has amended Claim 27 to read “inputted”

### 102 Rejections

Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by F. Takavaria “Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems”, Proceedings of the 1994 IEEE South African Symposium on Communications and signal Processing, 1994, COMSIG-94 04 October 1994, pp. 1-5. Applicant

respectfully asserts that the present invention as claimed in Claim 1 is neither shown nor suggested by the Takavaria reference.

In a previous Office Action, original Claims 8 and 9 were objected to as being based upon a rejected base claim, but would be allowable if rewritten in independent form including limitations of the base claim. Applicant thanks the Examiner for indicating allowable subject matter. Applicant has amended Claim 1 to substantially include the limitations of originally submitted Claims 8 and 9.

Applicant respectfully asserts the Takavaria reference does not teach a spread spectrum receiver for filtering out periodic signals as claimed in the present application. For example, claim 1 recites in part (emphasis added):

a digital filter ... outputs linear predictive coefficients representing interfering periodic or quasi-periodic signals ... and ... said digital filter outputs ... error coefficients that do not include said interfering periodic or quasi-periodic signals, wherein said linear predictive coefficients are discarded and said corresponding interfering periodic or quasi-periodic signals are filtered out, and wherein said error coefficients are used for signal processing.

Applicant respectfully asserts the Takavaria reference does not teach error coefficients are used for signal processing.

To the extent the Takavaria reference may mention the direct form tap coefficients are related to the lattice filter reflection coefficients through Levinson-Durbin recursive equations, Applicant respectfully asserts that the Takavaria reference

does not teach the linear predictive coefficients are discarded. Even if the present Office Action allegation is correct, Applicant respectfully asserts that the Takavaria does not teach error coefficients are used for signal processing as indicated in currently amended Claim 1.

Applicant respectfully asserts Claims 2, 4 through 7 and 10 are allowable as depending from an allowable independent Claim 1.

Claims 11, 13 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kenney et al. (US patent #6,009,129). Applicant respectfully asserts that the present invention is neither shown nor suggested by the Kenney et al. reference.

Applicant respectfully asserts the Kenney et al. reference does not teach a spread spectrum receiver for filtering out periodic signals as claimed in the present application. For example, Claim 11 recites in part (emphasis added):

A linear predictive coding filter for filtering out ... periodic or quasi-periodic signals corresponding to predictive coefficients and said linear predictive coding filter outputs error information which is then used for signal processing purposes.

Applicant respectfully asserts the Kenney et al. reference does not teach error information is used for signal processing.

To the extent the Kenney et al. reference may mention LCP may be used to determine that DSP is present [Col. 11 lines 1-11] and a gain level can be set [Col. 7 lines 59 – 65], Applicant respectfully asserts that the Kenney et al. reference does not teach

the linear predictive coefficients are filtered and error information is used for signal processing as indicated in currently amended Claim 11.

Applicant respectfully asserts that Claims 13 through 19 are allowable as depending from an allowable independent Claim 11.

### 103 Rejections

Claims 4 and 5 are rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over F. Takavaria "Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems", Proceedings of the 1994 IEEE South African Symposium on Communications and signal Processing, 1994, COMSIG-94 04 October 1994, pp. 1-5. Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Takavaria reference.

With respect to Claim 4, the present Office Action acknowledges that the Takavaria reference does not teach the specified band corresponds to IEEE 802.11(b). Applicant respectfully asserts it is not obvious that the specified band corresponds to IEEE 802.11(b) as claimed in the present application.

With respect to Claim 5, the present Office Action acknowledges that the Takavaria reference does not teach the specified band corresponds to Bluetooth. Applicant respectfully asserts it is not obvious that the specified band corresponds to Bluetooth as claimed in the present application.

Claims 14, 16, 17 and 19 are rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over Kenney et al. (US Patent # 6,009, 129).

Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Takavaria reference.

With respect to Claim 14, the present Office Action acknowledges that the Kenney et al. reference does not teach a frequency hopping spread spectrum system. Applicant respectfully asserts it is not obvious that the spread spectrum system includes a frequency hopping spread spectrum system as claimed in the present application.

With respect to Claim 16, the present Office Action acknowledges that the Kenney et al. reference does not teach compliance with IEEE 802.11(b). Applicant respectfully asserts it is not obvious that the filter is used to filter out periodic or quasi-periodic signals in compliance with IEEE 802.11(b).

With respect to Claim 17, the present Office Action acknowledges that the Kenney et al. reference does not teach the filter is in compliance with Bluetooth. Applicant respectfully asserts it is not obvious that filter is used to filter out said periodic or quasi-periodic signals in compliance with Bluetooth as claimed in the present application.

With respect to Claim 19, the present Office Action acknowledges that the Kenney et al. reference does not teach the filter is used in a wireless peer to peer system.

Applicant respectfully asserts it is not obvious that filter is used in a wireless peer-to-peer system as claimed in the present application.

Claim 15 is rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over Kenney et al. (US Patent #6,009,129) in view of F. Takavaria "Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems", Proceedings of the 1994 IEEE south African Symposium on Communications and signal Processing, 1994, COMSIG-94 04 October 1994, pp. 1-5. Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Kenney et al. or Takavaria reference, alone or in combination together.

The present Office Action acknowledges that the Kenney et al. reference does not teach linear terms are discarded. Applicant respectfully asserts the Takavaria reference does not overcome these and other shortcomings of the Kenney et al. reference. To the extent the Takavaria reference may mention the direct form tap coefficients are related to the lattice filter reflection coefficients through Levinson-Durbin recursive equations, Applicant respectfully asserts that the Takavaria reference does not teach the linear predictive coefficients are discarded. Even if the present Office Action allegation is correct, Applicant respectfully asserts that the Takavaria does not teach error coefficients are used for signal processing as claimed in the present application.

Claims 2, 10 26 and 29 are rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over F. Takavaria "Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems", Proceedings of the 1994 IEEE south African Symposium on Communications and signal Processing,

1994, COMSIG-94 04 October 1994, pp. 1-5 in view of Lee et al (US patent #6,426,977).

Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Takavaria or Lee et al. reference, alone or in combination together.

With respect to Claim 2, the present Office Action acknowledges that the Takavaria et al. reference does not teach a digital filter comprising a linear predictive coding filter. Applicant respectfully asserts the Lee et al. reference does not overcome these and other shortcomings of the Takavaria reference.

To the extent the Lee et al. reference may make a mere mention that embodiments can be programmed with a large number of discrete codes to facilitate covertness, security and multiple access, Applicant respectfully asserts that the Lee reference does not teach nor even mention linear predictive coding and or filters. In addition, Applicant respectfully asserts it is not obvious that the digital filter comprises a linear predictive filter.

With respect to Claim 10, 26, and 29, the present Office Action alleges claim 10, 26, and 29 are analyzed as followed by Claim 2. To the extent the limitations of Claim 10, 26 and 29 are similar to Claim 2, Applicant respectfully asserts the Lee et al. reference does not teach the claimed invention under rational similar to Claim 2 above.

Claims 6 is rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over F. Takavaria "Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems", Proceedings of the 1994 IEEE South African Symposium on Communications and signal Processing, 1994, COMSIG-

94 04 October 1994, pp. 1-5 in view of Zeidler et al. in "Frequency Tracking Performance of Adaptive Lattice Filters". Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Takavaria or Zeidler et al. reference, alone or in combination together.

With respect to Claim 6, the present Office Action acknowledges that the Takavira et al. reference does not teach a modulated CDMA receiver. Applicant respectfully asserts the Zeidler et al. reference does not overcome these or other shortcomings of the Takavaria reference. To the extent the Zeidler et al. reference may make a mere mention that in applications of CDMA techniques, it has been proposed that systems using CDMA be overlaid on top of the spectra of existing narrowband microwave users in urban areas, Applicant respectfully asserts a spread spectrum receiver further comprising a modulated CDMA receiver as claimed in the present application is not obvious.

Claims 7 is rejected in the above referenced Office Action, under 35 U.S.C. 103 (a) as being unpatentable over F. Takavaria "Adaptive Lattice Filters for Narrowband Interference Rejection in DS spread Spectrum Systems", Proceedings of the 1994 IEEE south African Symposium on Communications and signal Processing, 1994, COMSIG-94 04 October 1994, pp. 1-5 in view of Yuen (US patent application # 2003/0185286A1)". Applicant respectfully submits that the present claimed invention is neither shown nor suggested by the Takavaria or Yuen reference, alone or in combination together.

The present Office Action acknowledges the Takavaria reference does not teach an AD converter. Applicant respectfully asserts the Yuen reference does not overcome



these and other shortcomings of the Takavaria reference. To the extent the Yuen reference may merely show an AD converter, Applicant respectfully assert Yuen does not teach an analog-to-digital converter which converts said spread spectrum signal received by said antenna into a digital signal which is input directly into said digital filter as claimed in the present application.

#### Allowable Subject Matter

The present Office Action indicates Claim 27 would be allowable if rewritten to overcome the objections. Applicants have amended Claim 27 to overcome the objections. Applicant thanks the Examiner for indicating allowable subject matter

Claims 20, 21, 23 – 25 and 30 are allowed. Applicant thanks the Examiner for indicating allowed subject matter.

## Conclusion

In light of the above-listed amendments and remarks, Applicant respectfully requests allowance of the remaining Claims. The examiner is urged to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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Date: 11/8, 2004

A handwritten signature in cursive script, reading "John F. Ryan", written over a horizontal line.

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